

USSN: 10/773,176
Art unit: 1712
Examiner: Daniel S. Metzmaier

REMARKS/ARGUMENTS

A mutual solvent is commonly understood as a solution that is miscible with more than one class of liquids. In claim 1, the mutual solvent system has been clarified as comprising "a solution of" the listed components. Clear support for this amendment may be found in the description in paragraph 12, where an exemplary mutual solvent system is described as a "100 mL solution". The Applicant submits that from paragraph 12 and the application as a whole, a skilled worker would understand that the mutual solvent system forms a solution.

Claims 1, 10, and 30-36 have been rejected under 35 USC 103(a) as being unpatentable over Watkins. Applicants respectfully traverse this rejection.

As reiterated by the Supreme Court in *KSR*, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:

1. Determining the scope and content of the prior art;
2. Ascertaining the differences between the claimed invention and the prior art; and
3. Resolving the level of ordinary skill in the pertinent art.

Watkins discloses a composition and method for forming a stable foamed treating fluid containing an acid component (col. 2, lines 46-51). Indeed, all of the objects of the invention (col. 2, lines 42-63) as well as all of the claims relate to foamed compositions of this nature. The composition includes a unique foaming agent mixture (col. 3, lines 5-22).

The foamed composition may contain an organic solvent and an emulsifying agent (col. 2, lines 46-51). The organic solvent component can be a hydrocarbon solvent, halogenated hydrocarbon, or a polar solvent or mixtures thereof (col. 7, lines 33-36). Regarding the polar solvent, Watkins

USSN: 10/773,176

Art unit: 1712

Examiner: Daniel S. Metzmaier

states "Polar solvents and mixtures thereof which can be employed include alcohols, ketones, ethers and esters" (col. 8, lines 6-7). No examples are given by Watkins that disclose a treating fluid with a mixture of two or more organic solvents, and there is no discussion as to what proportions each organic solvent would contain in any such mixture.

As mentioned in the last response, Watkins states that "in order that the treating composition has a substantially uniform composition, it is necessary to add an emulsifying agent to emulsify or disperse any immiscible phases" (col. 9, lines 1-4, underlining added for emphasis).

The Applicant submits that the invention as claimed in claim 1 is different from Watkins.

The Applicant's invention as defined by claim 1 requires a:

"mutual solvent system comprising a solution of:

an alcohol that is water soluble present in the amount of at least 5% by weight of the mutual solvent system;

an ester that is water and oil soluble present in the amount of at least 5% by weight of the mutual solvent system;

an aqueous acid comprising water and acid, the aqueous acid being present in an amount at least 5% by weight of the mutual solvent system; and

a solvent that is at least one of a ketone that is water and oil soluble and a cyclic ether that is water and oil soluble."

Thus, the question to be asked is whether or not the claimed invention would have been obvious to one of ordinary skill in the art, in consideration of the resolved Graham factual inquiries.

Section 2141 of the Manual of Patent Examining Procedure states that "the focus when making a determination of obviousness should be on what a person of ordinary skill in the pertinent art would have known at the time of the invention, and on what such a person would have

USSN: 10/773,176

Art unit: 1712

Examiner: Daniel S. Metzmaier

reasonably expected to have been able to do in view of that knowledge." The Applicant submits that a skilled worker with knowledge of Watkins would not have been enabled to produce the Applicant's invention as defined by claim 1.

From Watkins, the skilled worker would have expected that any composition containing an organic solvent or solvents would be required to have an emulsifying agent (col. 2, lines 48-52) to form a substantially uniform composition of oil and water phases. An emulsification is understood to be a multi-phase mixture where one phase is provided in droplets thoroughly dispersed within the other phase. It is submitted that an emulsified mixture is not a solution.

Because Watkins teaches that the resulting combination will require emulsification, Watkins teaches away from any such combination of Watkins organic solvents forming a mutual solvent system solution. Thus, the combination of elements required by the Applicant's claim 1 forming a solution is an unexpected result. Watkins clearly did not recognize the utility or existence of the Applicant's combination.

The Applicant submits that its requirement of a solution over Watkins emulsified mixture is significant. A solution, which is understood as having one phase, is advantageous over an emulsified mixture for several reasons. Firstly, emulsifiers are expensive, and the cost benefit alone of not being required to add an emulsifier results in a cheaper product. Secondly, if the required emulsifier breaks down or leaches from the mixture prior to achieving its function at the targeted material, the two phases will separate, resulting in a less effective composition. This problem is avoided using a solution, as no emulsifier is required. Thirdly, the uniform composition of a solution ensures that the mutual solvent system will begin to dissolve the surface area of a targeted material upon contact. In contrast, an emulsion, which has a varying, suspended composition, may require vigorous stirring or continuous movement in order to dissolve a targeted material.

Thus, the Applicant submits that inventive ingenuity would have been required to produce the Applicant's combination.

USSN: 10/773,176
Art unit: 1712
Examiner: Daniel S. Metzmaier

Further, the focus of Watkins is clearly on foamed compositions that include a unique foaming agent mixture, and would have led a skilled worker away from the Applicant's invention as defined by claim 1. Watkins must be read as a whole. The skilled worker would thus have understood several things regarding the organic solvent. Firstly, the skilled worker would have understood that the organic solvent of Watkins was optional (col. 3, lines 23-24). Secondly, should he choose to use an organic solvent, the skilled worker would have understood that any one or mixtures thereof of a wide variety of organic solvents may be used, including hydrocarbon, halogenated, or polar solvents. The examples of Watkins, which use a single organic solvent in each case, do not imply that combinations would be necessary. Thirdly, the skilled worker would have understood that for each of these categories of solvents, any one or mixtures thereof of solvents from the wide variety of disclosed sub-categories could be used.

What this skilled worker would have understood from the enormous amount of exemplary organic solvents provided by Watkins would have been that variations in the specific organic solvent or solvents used were details of a peripheral nature in relation to Watkin's invention. No functional advantage would be expected to flow from combinations of the organic solvents.

Thus, the Applicant submits that, in light of the massive number of options for organic solvents taught by Watkins, a complete lack of any functional benefit in choosing a certain combination, and absolutely no direction as to the specific combination, amounts, or utility of the Applicant's combination, the skilled worker would have been led away from the Applicant's invention as defined by claim 1. Thus, the Applicant submits that inventive ingenuity would have been required to produce the Applicant's combination.

Thus, the Applicant's invention as defined by claim 1 is not obvious in view of Watkins. Accordingly, claims 10 and 30-36 are also not obvious in view of Watkins.

Reconsideration and withdrawal of the rejections, and allowance of the claims, is respectfully requested.

USSN: 10/773,176
Art unit: 1712
Examiner: Daniel S. Metzmaier

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